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No. 5

Dr. J. W. GLAISHER, M.A., F.R.S., President, in the Chair.

John Walter Lawrence Child, Vernham, Merton Hall Road, Wimbledon ;

José Comas Solá, S. Felipe, 29 S. Gervasio, Barcelona, Spain ;
Rev. John Horsley Haslam, M.A., Vicar of St. Saviour's,
Denmark Park, S.E. ;

Joseph Lunt, B.Sc., F.I.C., Royal Observatory, Cape of Good Hope ; and

Joges Chandra Ray, M.A., Professor of Physical Science, Cuttack, Bengal, India,

were balloted for and duly elected Fellows of the Society.

The following Candidates were proposed for election as Fellows of the Society, the names of the proposers from personal knowledge being appended :—

Alexander Eugen Conrady, F.R.M.S., 104 Park Street, Camden Town, N.W. (proposed by Edmund J. Spitta) ;

Henry Tresawna Gerrans, M.A., Fellow and Tutor of Worcester College, Oxford (proposed by Arthur R. Rambaut) ; and

Maurice Edmond Joseph Gheury, 23 Downshire Hill, Hampstead, N.W. (proposed by Silvanus P. Thompson).

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One hundred and ten presents were announced as having been received since the last meeting, including, amongst others :—

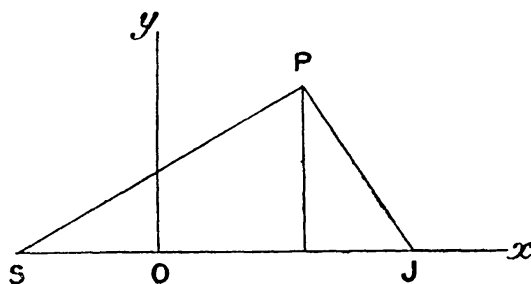
A. Auwers, *Mittlere Örter von 570 Sternen aus den auf der Sternwarte Greenwich unter Direction von Pond in den Jahren 1811–1819 angestellten Beobachtungen abgeleitet* (presented by the author) ; Professional papers of the Survey of India Department, No. 5, containing Major S. G. Burrard's paper on the attraction of the Himalaya Mountains (presented by the Survey Department).

On Periodic Orbits in the Restricted Problem of Three Bodies.

By E. T. Whittaker, M.A.

1. *Introduction.*—In a paper published in the *Monthly Notices*, vol. lxii. pp. 186–193, two properties of periodic orbits were communicated. The periodic orbits discussed in that paper were the closed curves which can be described by a body moving under the influence of any number of centres of force. It was supposed that these centres of force are fixed, so that the energy of the body can be partitioned into kinetic energy, which is a homogeneous quadratic function of the components of velocity, and potential energy, which does not involve the components of velocity or the time at all.

The application of periodic orbits, which is most important from the astronomical point of view, is the application to the restricted problem of three bodies (the orbits of Hill, Poincaré, and Darwin). This problem consists in the determination of the motion of a small planet P under the attraction of the Sun S and a large planet J, it being assumed that the motion of S and J is purely circular, and that the whole motion takes place in one plane. In this problem the conditions are not so simple as in the class of problems studied in the previous paper, since S and J are not fixed but *moving* centres of force, and the theorems here stated cannot be applied.



The object of the present note is to show that the methods of the previous paper can nevertheless be extended to the restricted problem of three bodies, and that two results can thus be